FACT SHEET

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NATIONAL MISSILE DEFENSE INTEGRATED FLIGHT TEST THREE (IFT-3)

Introduction

The National Missile Defense (NMD) program is being developed by the Ballistic Missile Defense Organization's (BMDO) NMD Joint Program Office (JPO). Its purpose is to protect all 50 states from a limited number of long-range ballistic missiles launched from a rogue nation or as a result of an accidental or unauthorized launch from a current nuclear power. The focus of the Integrated Flight tests are to provide the data needed to assess NMD's developing capabilities, system performance, and overall system maturity.

The IFT-3 Payload Launch Vehicle lifts off from the Kwajalein Missile Range on October 2, 1999.

Integrated Flight Test (IFT) Program

The IFT Program incorporates developmental flight tests that are carefully designed to answer specific questions about elements of the NMD system. NMD elements such as the Ground Based Radar (GBR) and the Battle Management/ Command, Control, and Communications (BM/C3) will participate in Weapon System flight tests to test their individual capability and later at the system level (IFT-4 and beyond) to test their compatibility to work together. IFTs use targets (a look-alike dummy warhead, or reentry vehicle and decoys) flown from Vandenberg Air Force Base (VAFB), California, toward the Kwajalein Missile Range (KMR) located about 4,300 miles away in the mid-Pacific Ocean.

The NMD Program conducted two successful non-intercept IFTs in 1997 and 1998. These tests consisted of exoatmospheric kill vehicle (KV) sensor fly-bys of test targets. During the tests, operation of the KV sensor was validated in the flight environment. Data was collected, transmitted to the ground and used to exercise and refine target discrimination algorithms for subsequent intercept tests. During both IFTs the KV sensor successfully located the target warhead from among the threat representative decoys, a very significant technical achievement.

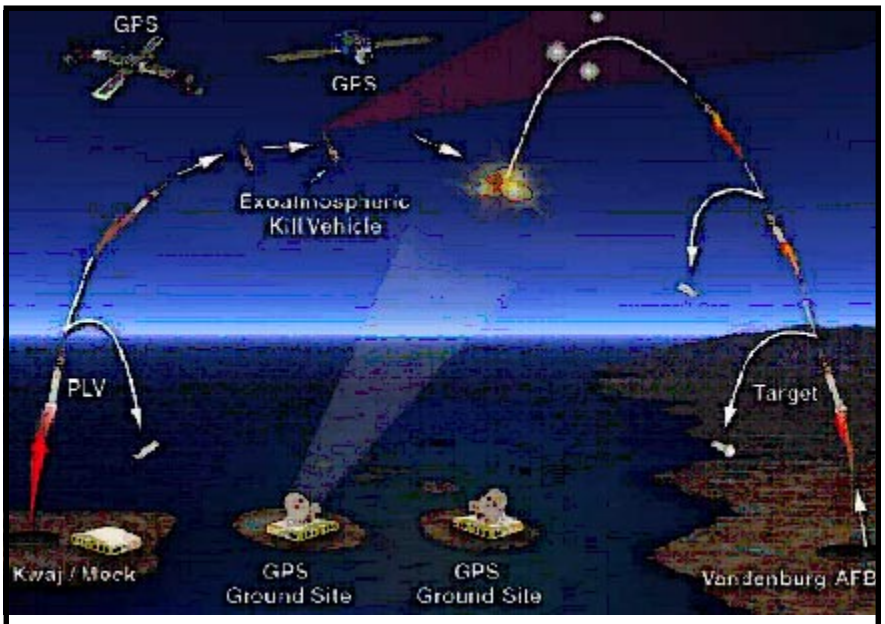
IFT-3

IFT-3 was the first Weapon System KV flight test mission. The primary objective of this mission was to demonstrate KV flight test performance. Performance was measured by the ability of the KV to: (1) separate/deploy from the Payload Launch Vehicle (PLV) and orient toward the target complex, (2) acquire the target complex, (3) track the objects in the target complex, (4) discriminate the objects in the target complex, (5) select the RV and divert/home toward the RV and (6) to intercept the RV. Secondary objectives included demonstrating of NMD integrated prototype element and system functional capability (the GBR's ability to detect, acquire and track the target complex and BM/C3's ability to integrate system elements) and collecting data for (1) models and simulations; (2) element and system performance analyses; (3) impact and lethality analyses; (4) reliability, availability and maintainability analyses; and (5) assessment of the test infrastructure.

On October 2, 1999, BMDO successfully conducted the IFT-3 Weapon System test engagement. At 7:02pm PDT, IFT-3 began with the launch of the target complex aboard a specially configured Air Force Minuteman II, called the Multi-Service Launch System (MSLS), fired from VAFB toward KMR. The test target/decoy are designed to represent the type likely to be used by a hostile missile launched by a rogue nation against any of our 50 states. After target launch, VAFB radars, via VAFB mission control sent tracking information to a mid-range radar (FPQ-14) in Hawaii, which in turn provided tracking data to the KMR radars. The PLV was

launched from Meck Island in the Kwajalein Missile Range in the Central Pacific Ocean. While in-flight, the PLV received target updates from PLV mission control, which it then passed to the KV. The KV then deployed from the PLV and repositioned itself to point its seeker field-of-view toward the predicted target position. Once uncapped, the on-board passive seeker sought out and acquired the target complex. From the target complex, the KV ascertained which was the RV and targeted it instead of the decoy. After target designation, the KV tracked the RV while executing "end game" maneuvers to achieve a direct impact kill. A successful interception of the RV occurred at 7:32pm PDT, some 100 miles above the earth. "Hit-to-kill" technology results in the total destruction of the warhead through kinetic energy only, with no explosives aboard the KV. "Hit-to-kill" is the only way to ensure total destruction of the RV and the nuclear, chemical or biological weapon that an RV would carry during an actual missile attack.

During this same time period (from target launch at 7:02pm PDT until RV intercept at 7:32pm PDT) a noninterference "shadow" test of the NMD System and two additional NMD elements (GBR and BM/C3) also occurred. After target launch, early warning sensors (Defense Support Program satellite) and an upgraded early warning radar at Beale AFB, California detected the missile launch, tracked, identified, and designated the RV, and then transmitted the tracking data via the Falcon AFB (Command) BM/C3 to the KMR (Site) BM/C3. Using data from the surveillance and tracking systems, the Site BM/C3 planned the KV engagement, cued the GBR, provided weapons release authorization, and sent launch commit parameters to the test interceptor. After KV separation, the BM/C3 provided simulated target updates and a target object map (TOM) to the KV based on GBR tracking data. GBR also monitored



Integrated Flight Test-3 Flight Profile

the intercept and provided kill assessment data to the BM/C3. BM/C3 could then plan/direct further battle management actions, if required.

Since this was primarily a test to evaluate KV technology, it was necessary to ensure the target missile and the target complex were placed into the proper positions in space. A Global Positioning Satellite (GPS) receiver was placed on the target to send its position to ground control, and the target flew a pre-programmed flight path. Since the PLV did not receive target location information from the command and control center, as it would during a test using the integrated NMD system, or during an actual attack situation, it also flew to a pre-programmed position and received the necessary target location information and downloaded it to a computer in the KV. After it reached this position, which was several hundred miles from the target, it released the KV. Once the KV deployed from the PLV it used only its on-board systems to locate, track and discriminate the target, and then used its rocket-assisted divert motors to steer into the RV for a hit-to-kill collision.

The IFT-3 Exoatmospheric Kill Vehicle

Length ~ 55 in.
Diameter ~ 23 in.
Weight ~ 121 lbs.

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